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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-----------------------|---------------------|------------------|
| 10/668,451 | 09/22/2003 | Gregory Kent Williams | 229278 | 2349 |
| 72286 7590 03/25/2008 | | | | |
| LEYDIG, VOIT & MAYER, LTD | | | | |
| TWO PRUDENTIAL PLAZA, SUITE 4900 | | | | |
| 180 N. STETSON | | | | |
| CHICAGO, IL 60601-6731 | | | | |
| EXAMINER | | | | |
| HOEKSTRA, JEFFREY GERDEN | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 3736 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 03/25/2008 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/668,451

Applicant(s)

WILLIAMS ET AL.

Examiner

JEFFREY G. HOEKSTRA

Art Unit

3736

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-12 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-12 and 14-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Notice of Amendment

1. In response to the amendment filed on 12/31/2007, amended claim(s) 1, 9, 11, 12, and 19, and canceled claim(s) 2 and 13 is/are acknowledged. The current rejections of the claim(s) 1, 3-12, and 14-20 is/are *withdrawn*. The following new and reiterated grounds of rejection are set forth:

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3-12, and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valley et al. (US 5,795,325, hereinafter Valley) in view of Van Erp (US 5,591,142).

4. For claims 1, 8, 12, and 18, Valley discloses a sensor catheter (as best seen in Figures 7A-7C), comprising:

- an elongate flexible member comprising a catheter (300) having proximal and distal ends (as best seen in Figures 7A-7C), wherein the proximal end of the catheter is adapted to be coupled to a processing unit (335) (as best seen in Figures 7A-7C);
- a distally disposed sensor assembly (330, 331, and 350) disposed at the distal end of the catheter (as best seen in Figures 7A-7C); and
- a plurality of wires (334, 336, 352, 354, 339, and 341) extending from the proximal end of the catheter to the distal end of the catheter and coupled to the sensor assembly by an electrical connector (338, 340, 356, and 358) (as best seen in Figures 7A-7C),

- wherein the plurality of wires are divided into first (334 and 336), second (352 and 354), and third (339 and 341) wire bundles with each bundle consisting of a pair of twisted wires (column 17 line 7 – column 19 line 26),
 - wherein each of the three bundle has multiple wires twisted together (column 19 lines 13-26) and each of the three bundles are disposed within an outer sheath (304) having an inner wall (302) forming a space (as best seen in Figures 7B-7C) containing the first and second wire bundles of the plurality of wires (as best seen in Figures 7B-7C),
 - wherein each of the wires within each bundle is twisted together to reduce electromagnetic interference (column 19 lines 13-26), and
 - wherein the plurality of wires are capable of carrying control signals transmitted to the sensor assembly and sensor signals transmitted from the sensor assembly (column 17 line 7 – column 19 line 26).
5. For claims 3-7, 9-11, 14-17, 19, and 20, Valley discloses a sensor catheter, wherein the bundles are capable of being twisted together, wherein the wires within each bundle are capable of being twisted in a clockwise or counterclockwise manner (column 19 lines 13-26), and wherein the wire bundles are capable of being twisted in the opposite or the same directions as the direction the wires are twisted within the bundle.
6. Thus for claims 1, 3-12, and 14-20, Valley discloses the claimed sensor catheter, as set forth above, except for expressly disclosing (a) the first and second wire bundles are twisted together and disposed within the outer conductor assembly sheath having

the inner wall forming the space containing the first and second wire bundles of the plurality of wires and (b) the third wire bundle consisting of three wires.

7. Van Erp teaches a sensor catheter (abstract), comprising *inter alia*: a catheter (3) adapted to be coupled to a processing unit (8) (as best seen in Figure 1), a distally disposed sensor (5 or 9) (as best seen in Figures 2A-2B), and a plurality of wires (11) coupling the sensor to the processing unit (as best seen in Figure 1), wherein the plurality of wires (11) and bundles of multiple wires (10) are twisted together to reduce electromagnetic interference between (column 3 line 58 – column 4 line 30), wherein (a) first and second wire bundles (10) are twisted together (as best seen in Figure 5) and disposed within an outer conductor assembly sheath (18) having an inner wall (the interior wall of sheath 18) forming a space (as best seen in Figure 4A) containing the first and second wire bundles of a plurality of wires (as best seen in Figure 4A) (column 3 line 33 – column 4 line 30) and (b) a third wire bundle (10) consisting of three wires (as best seen in Figures 3-5) (column 3 lines 17-28).

8. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. All of the component parts are known in Valley and Van Erp. The only difference is the combination of the component parts into a single device. Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention to combine the components as taught by Valley with the components as taught by Van Erp to achieve the predictable results of reducing

electromagnetic interference (e.g. wire-to-wire cross-talk) by configuring a sensing catheter with an alternative wiring arrangement.

Response to Arguments

9. Applicant's arguments with respect to claims 1, 3-12, and 14-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miyauchi et al. (US 4,506,500) teaches a variety of bundling techniques and/or configurations for a plurality of wires.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY G. HOEKSTRA whose telephone number is (571)272-7232. The examiner can normally be reached on Monday through Friday 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571)272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/J.H./
Jeff Hoekstra
Examiner, Art Unit 3736

/Max Hindenburg/
Supervisory Patent Examiner, Art Unit 3736